

**Application N .: 10/084,989****Docket No.: 4459-079****REMARKS**

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested. Entry of this Amendment under Rule 116 is merited as it raises no new issues and requires no further search.

**Claims in general**

Claims 1 and 17 have been amended to additionally recite the thicknesses of the layers of molybdenum and the Ag-Al alloy layer. Support for this amendment is found in the specification, page 5, lines 25-30; and page 6, lines 22-24.

Claims 6, 12, 17, 22 and 23 have been amended to overcome the rejection under U.S.C 112, first paragraph.

**Rejection of Claims 6-8, 12, 17, 22 and 23 under 35 USC § 112, first paragraph**

Claims 12 and 17 have been amended to overcome the rejection under U.S.C 112, first paragraph.

Claims 6, 22 and 23 have been amended to additionally recite the condition, i.e. wavelength 550nm, at which the visible light reflectance of the reflective electrodes is observed. Applicant would like to direct the Examiner's attention to the commonly excepted principle that a visible light reflectance must be defined or observed at a specific wavelength. Thus, the limitation of wavelength 550nm was added to Claims 6, 22 and 23 for the purpose of more clearly defining the claimed invention without introducing new matter or broadening the scope of the claimed

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invention. Therefore, the amendments of Claims 6, 22 and 23 should be entered. See the reflectance observed in the visible range of the spectrum as shown in TABLE A and TABLE B filed in the Response dated January 16, 2004.

Since the condition, i.e., *wavelength 550nm*, for observing the visible light reflectance of the reflective electrodes has been added into Claims 6 and 22, it is clear for the skilled artisan that the visible light reflectance greater than 95%, while being observed at wavelength 550nm, can be obtained with the Ag-Al alloy containing about 5 at% or about 10 at% of silver.

The rejection under U.S.C 112, first paragraph of Claims 7, 8, 12 and 23 is also overcome in view of the amendments made to claims 6 and 22.

Withdrawal of the 35 U.S.C 112, first paragraph rejection in view of the above is believed appropriate and therefore courteously solicited.

#### **Rejection of Claims 1 and 5 under 35 USC § 103(a)**

The Examiner rejected Claims 1 and 5 under 35 U.S.C. 103(a) as being unpatentable over *Sung Chae et al.* (Pub. No. US 2002/0135709 A1) in view of *Jeong et al.* (USPN 6,486,514 B2) and *Iwasaki et al.* (USPN 5,986,204).

The Examiner's rejection is traversed, because *Jeong* teaches away from the proposed combination with *Iwasaki*.

The Examiner is correct, noting that *Jeong* heavily criticizes Al alloys of the type used by the primary reference of *Sung Chae*. See column 1, lines 24-27 of *Jeong*. *Jeong* proposes to use Ag alloys instead. See column 1, lines 51-53 of *Jeong*. As well known in the art, an Ag alloy must predominantly include Ag. In other words, *Jeong* requires Ag alloys that must include at least 50%

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of Ag. This is evident from the entire disclosure of *Jeong*, for example, column 2, lines 3-5; Table 1; and column 8, lines 9-10 ( $a+b+c < 20$  at%). Thus, *Jeong* specifically teaches away from an alloy having less than 80%, or at least 50%, Ag. A person of ordinary skill in the art would not have been motivated to further modify the Ag content in the *Sung Chae/Jeong* combined device in the manner taught by *Iwasaki*, because the resulting device would include an alloy containing less than 30 at% Ag which, according to *Jeong*, is inferior to the Ag alloy already present in the *Sung Chae/Jeong* combined device.

Apparently, the references are not combinable in the manner proposed by the Examiner.

Nevertheless, claim 1 has been amended to additionally recite the thicknesses of the first and second layers of molybdenum and the Ag-Al alloy layer. The first layer of molybdenum has a thickness of about 150 to 700 Angstroms, the Ag-Al alloy layer has a thickness of about 1000 to 3000 Angstroms and the second layer of molybdenum has a thickness of about 300 to 1000 Angstroms while the Ag-Al alloy layer contains about 5 to about 10 at% of silver (as recited in Amended Claim 1). It has been found by Applicant that it is possible to significantly reduce the step coverage problem by adjusting the content of silver from about 5 to about 10 at% in the Ag-Al alloy layer where the first and second layers of molybdenum and the Ag-Al alloy layer respectively have thicknesses within the specific thickness ranges as recited in Amended Claim 1

In addition, although *Iwasaki et al.* has disclosed a reflecting layer comprising an Ag-Al alloy having a content of silver equal to or less than 30 at% to obtain a high reflectivity, the skilled artisan would not have been motivated to make a conductive pattern layer comprising an Ag-Al alloy layer having a content of silver from about 5 to 10 at% with the first and second layers of molybdenum and the Ag-Al alloy layer respectively having the thicknesses as recited in Amended Claim 1. Since the added features are not disclosed or suggested by *Sun Chae et al*, *Jeong et al* or *Iwasaki et al*, even if the references could be properly combined, Applicant respectfully submits that the claimed silver content ranges and the claimed thickness ranges as recited in Amended

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Claim 1 are critical and are not obvious to a person of ordinary skill in the art.

Withdrawal of the Examiner's 35 U.S.C. 103(a) rejections of independent Claim 1 is therefore believed appropriate and respectfully requested. Claim 5 depends from independent Claim 1, and is considered patentable at least for the reasons advanced with respect to Claim 1.

**Rejection of Claims 6-8 and 12 under 35 USC § 103(a)**

The Examiner rejected Claims 6-8 and 12 under 35 U.S.C. 103(a) as being unpatentable over *Park et al.* (USPN 6,466,280 B1 in view of *Shimada et al.* (USPN 5,805,252) and *Iwasaki et al.* (USPN 5,986,204).

Amended claim 6 is directed to a liquid crystal display in which reflective electrodes of Ag-Al alloy contain about 10 at% of silver and the reflective electrodes have a visible light reflectance greater than 95% while is observed at wavelength 550nm. Since the visible light reflectance greater than 95% as recited in Amended Claim 6 is observed at wavelength 550nm rather than wavelength 800nm in Fig 5 of Iwasaki, the Examiner's proposed combination of the cited references still fails to teach or disclose all limitations of Amended Claim 6, i.e. a liquid crystal display comprising reflective electrodes of Ag-Al alloy containing about 10 at% of silver wherein the reflective electrodes have a visible light reflectance greater than 95% while being observed at wavelength 550nm.

Withdrawal of the Examiner's 35 U.S.C 103(a) rejections of independent Claim 6 is therefore believed appropriate and respectfully requested. Claims 7 and 12 depend from Claim 6, and are considered patentable at least for the reasons advanced with respect to Claim 6.

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The Examiner rejected Claims 2, 17 and 18 under 35 U.S.C. 103(a) as being unpatentable over *Sun Chae et al.* (Pub. No. US 200210135709 A1) in view of *Iwasaki et al.* (USPN 5,986,204) and further in view of *Kim* (USPN 6,057,678) and *Jeong et al.* (USPN 6,486,514B2).

As to claim 2, the cited references or their proposed combination fail to teach or suggest the feature that the first layer of molybdenum has a thickness of about 150 to 700 Angstroms, the Ag-Al alloy layer has a thickness of about 1000 to 3000 Angstroms and the second layer of molybdenum has a thickness of about 300 to 1000 Angstroms while the Ag-Al alloy layer contains about 5 to about 10 at% silver (as recited in Amended Claim 1). Therefore, Amended Claim 1 is nonobvious over the cited references.

Claim 2 depending from Claim 1 is considered patentable at least for the reasons advanced with respect to Claim 1.

As to claim 17, the Examiner's combined device would still fail to teach or disclose all limitations of independent Claim 17, i.e., the layer of molybdenum having a thickness of about 150 to 700 Angstroms and the Ag-Al alloy layer having a thickness of about 1000 to 5000 Angstroms while the Ag-Al alloy layer containing about 5 to about 10 at% of silver.

In addition, *Jeong* teaches away from the claimed invention as argued with respect to Claim 1.

Withdrawal of the Examiner's 35 U.S.C. 103(a) rejection of independent Claim 17 is therefore believed appropriate. Claim 18 depends from Claim 17, and is considered patentable at least for the reasons advanced with respect to Claim 17.

Each of the Examiner's rejections has been traversed and/or overcome. Accordingly, Applicant respectfully submits that all claims are now in condition for allowance. Early and

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favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

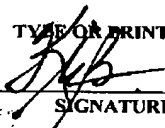
To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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